Video
FULL DETAILS AND TRANSCRIPT

Reviewing Student Work

Madison Elementary School, Washington • May 2008

Topic: National Math Panel: Critical Foundations for Algebra
Practice: Mastery Framework

Highlights

- Purpose of looking individually at student work to determine next interventions
- Explanation of a protocol to review student work
- Introduction of the problem and figuring out how a student might approach the problem
- Teachers' speculation on student strategies (step 1)
- Discussion of how to tell from student work what student knows (step 2)
- Determination of what content knowledge student should work on next (step 3)
- Summary of discussion of next steps for several students
- Assessment of protocol and process of using it

About the Site

Madison Elementary School

Spokane, WA

Demographics

76% White

6% Hispanic

5% Black
3% Asian
2% Native American
24% Free or Reduced-Price Lunch
3% English Language Learners
18% Special Education

Madison has put many practices and strategies in place to "leave nothing to chance" when it comes to teaching mathematics. The staff has deliberately reviewed all aspects of instruction and has well-developed approaches in the following areas:

- Philosophy of building conceptual understanding, problem-solving, and fluency with facts;
- Using an open number line to teach fractions;
- Teachers' strategies for encouraging effort, including messages to parents about the importance of effort and persistence;
- Assessment grids used to track performance on benchmark assessments, and analyze individual needs and whole class need for re-teaching; and
- Structured protocol for reviewing student work.

Full Transcript

My name is Brent Perdue. I am the Principal at Madison Elementary School in Spokane, Washington, part of Spokane Public Schools.

And I am Ellen Rush, and I am a 1st grade teacher.

I am JoAnne Hagan. I am an instructional assistant.

I am Eileen Mabee, and I am in 1st grade at Madison Elementary.

I am Sharon Leonard, and I am the instructional math coach here at Madison Elementary.

Perdue: I think there has been a transition between spending our time focusing on what we have taught to where we are now, where we are really looking at what has been learned. If we are not looking at student learning, we don't know what kind of interventions to make on a particular child, where the next steps are in their learning. If we just look at scores or we just teach and then we put a smiley face or a star on it and hand them back, we don't know what each individual child needs and so we would end up making instructional decisions based on what we think is right for all kids when all learners are not the same. So, by looking individually at student work, we can make specific point-of-fact interventions for a child who needs…what is his or her next step in their learning, what will take them up kind of a scaffold of learning so that they can get to those next places, because there aren't giant leaps in understanding, it is typically just

small steps towards a deeper understanding of mathematics.

Perdue (to group): Okay, so today, we are going to use a protocol to look at some problems the students have done, know what steps we want to take next. We can move through a number of students who make some steps and intervening and helping them move to the next level in their learning. Sharon will kind of be our note-taker, and we will be looking at—just like we always do—looking at first their strengths, what do they bring to the table, so we can celebrate those pieces, what are some of the misunderstandings or conceptual content pieces that might be missing, and then we will look at some strategies or interventions for each child. It's a rigorous problem, it has two parts of it, so it will be interesting to see how our young 1st graders will attack that. A van holds 11 children, a bus holds 45 children. How many vans are needed to take 100 children to the museum? How many buses are needed to take 100 children to the museum? First of all, we want to get ourselves immersed in the problem and think about what a 6- or 7-year-old, how they may approach this problem.

What are some strategies you think kids might employ based on what you have seen in other work?

Leonard: I am wondering if some of our students might be kind of overwhelmed and then just begin to draw tallies or marks or need some kind of picture and then group them.

Rush: And I am hoping that children will look at place value there and realize that 11 is a 10 and a 1, that 45 is 40 and 5.

Perdue: That would be interesting to see if kids pulled out 100 Unifix Cubes and those things that I think a lot of our kids are past but they certainly might.

Mabee: I am hoping that they go for the place value and look for the 10, look for the bundles of 10.

Rush: I am wondering if anyone is going to change 45 to 50.

Hagan: That's exactly what I was wondering.

Rush: And realize that 50 and 50 would be 100 so there would have to be three buses, because they do that type of thinking often in the classroom and I wonder if they will attack this like that or if they are so overwhelmed with that big number that they won't use something that they might already know.

Hagan: But some of them, I think, will use that landmark number, I think, because we have been talking about those…

Rush: Yeah. I think for sure with 11, they will use 10 as the landmark.

Perdue: Step 2 of your protocol, we are just looking at what the math content that the student knows. So, what are the strengths you think that Lucia brings to the table when you look at this? So we will just start with where their thinking is, we will just do a quick whip-around.

Leonard: Well, I definitely see that the breaking apart of 11 into 10 and 1.

Mabee: And I see that she knows how to take the 10 and the 1 to keep adding it on successively.

Hagan: Yeah, and I noticed the pattern of 11s that she has.

Rush: And I noticed she also drew this as a bundle of 10 and 1.

Perdue: This picture tells me that she knows that 11 and 11 is 22 and is able to skip, we have 22, one more is 33. She is breaking apart 45 into 40 and 5.

Rush: And she knows it is 45.

Leonard: What do her tallies indicate? These are the 10 sticks?

Rush: That looks like 10 sticks but not, she is lost there. She has lost all those big numbers.

Perdue: Next step, what's one thing that, one piece of content knowledge that she could work on? I mean, content knowledge, it could also be process as far as how clear her answer is.

Rush: This is the one I am curious about. She has 99 here. She has done that pattern of putting 11 in, marking all of this. She knows she only needs one more but she still used that same idea of that's how much a van can hold. And her answer is correct but I would question her on "Do you realize that 99, how many more would you need?"

Perdue: She has some facility with 10s and near 10s, but what do you do with larger numbers.

So, what would be our next steps with Lucia? In this particular part of the problem, she is on her way but what would be the next thing you might do?

Rush: Well, I think she is very confident with the smaller number like 11 and so, my next step with her is to make it a little bit more complicated, get bigger numbers out there.

Leonard: I wonder, too, Ellen, you talked about bigger numbers, but I wonder even if it were a number that didn't have such a nice pattern as 11, if that might also, it would be the next step to push her just a little bit further…

Perdue: The van holds 13 kids…

Perdue: Okay. So we are going to just go real quickly, one or two things about a student we have talked to that you think you can put in place in the next few days or within this next week that will help them move to the next stage of learning.

Rush: I think I would really work on Lucia on her number sense because I don't think she realizes where 45 is connected to 100, and I think that's a weakness, and so I would work on different problems, different situations that will get her to grow in that number sense.

Perdue: Would you use a number line or 100s chart?

Rush: I think a number line would work really well with her on that versus the 100s chart, which she can see the length easier on there…

Mabee: And I will have her build a 10 and a 1 and then add another 10 and 1, so she can visually see that she can't just add 10 to the number if it's 11.

Hagan: And I think with Lucia, I would build on that number sense that she has with the 10 and the 1, that she knows that, and just kind of go up from there and see what else she can do with, like, the 10 and the 2 or the 10 and 3 and see if she still has that understanding.

Rush: And I think Lucia building 45 is, as you're going to do with Skyler, will really help her see what a 45 looks like, because she was not aware of that in her paper.

Perdue: So, we always take a couple of minutes to think about the protocol itself. How did it go today? Was there something we should look at changing? Was there anything that was either too tight or not tight enough to help us move through our work?

Hagan: I thought it was very focused.

Rush: And I like hearing what other people saw in their work that I didn't see.

Mabee: And I like the specific ideas on what to do with children to help carry them to the next step.

Leonard: I really appreciated that we made use of our time and during that time also came up with a plan for the students.